



SLOVENSKI STANDARD
oSIST prEN ISO 19085-2:2015
01-januar-2015

**Lesnoobdelovalni stroji - Varnost - 2. del: Horizontalne krožne žage za razrez plošč
(ISO/DIS 19085-2:2014)**

Woodworking machines - Safety - Part 2: Horizontal beam panel circular sawing machines (ISO/DIS 19085-2:2014)

Holzbearbeitungsmaschinen - Sicherheit - Teil 2: Horizontale Plattenkreissägemaschinen mit Druckbalken (ISO/DIS 19085-2:2014)

Machines à bois - Sécurité - Partie 2: Scies circulaires à panneaux horizontales à presseur (ISO/DIS 19085-2:2014)

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Woodworking machines — Safety —

Part 2: Horizontal beam panel circular sawing machines

*Machines à bois — Sécurité —**Partie 2: Scies circulaires horizontales à panneaux*

ICS: 13.110;79.120.10

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ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 19085-2 was prepared by Technical Committee ISO/TC 39, *Machine tools*, Subcommittee SC 4, *Woodworking machines*.

ISO 19085 consists of the following parts, under the general title *Woodworking machines — Safety requirements*:

- *Part 1: Common requirements*
- *Part 2: Horizontal beam panel sawing machines*
- *Part 3: Numerically controlled (NC) boring and routing machines*
- *Part 4: Vertical panel sawing machines*
- *Part 5: Dimension saws*

All these parts have been prepared simultaneously by Technical Committee ISO/TC 39, Machine tools, Subcommittee SC 4, Woodworking machines

Additional parts are to be developed in future to deal specific requirements for other woodworking machines

Introduction

ISO 19085-2 was prepared by ISO/TC 39/SC4 under the Vienna Agreement in order to obtain EN ISO standards on technical safety requirements for the design and construction of woodworking machinery.

ISO 19085 as a whole concern designers, manufacturers, suppliers and importers of machines described in the Scope. It also includes a list of informative items to be provided by the manufacturer to the user.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document. In addition machines shall be designed according with the principals of ISO 12100:2010 for relevant but not significant hazards which are not dealt with covered by this International Standard.

This document together with ISO 19085-1 is a type C standard as defined in ISO 12100:2010.

When requirements of this type-C standard are different from those which are stated in type-A or -B standards, the requirements of this type-C standard take precedence over the requirements of the other International Standards for machines that have been designed and built according to the requirements of this type-C standard.

This part of ISO 19085 is intended to be used in conjunction with part-1. As far as possible, the requirements of this part are treated by way of reference to clauses of ISO 19085-1, thus reducing considerably its length by avoiding many repetitions.

[Clauses 5](#) and [6](#) subclauses of this part can confirm, supplement (with additions) or modify (with replacements) the corresponding subclause ("item" in table below) of ISO 19085-1, in the following way:

<i>Reference to part-1</i>	<i>How the document notice it</i>	<i>Explanation</i>
Confirmation	item number and title only present	part-1 same item text applies, all and only
Exclusion	item number and title not present	part-1 same item text is not applied nor replaced
Addition	"This subclause of part-1 applies with the following additions."	part-1 same item text applies together with additional specific text
Replacement	"This subclause of part-1 is replaced by the following specific text."	part-1 same item text does not apply and is replaced by specific text, sometimes under Specific further sub-clauses

[Clauses 1, 2, 4](#) are always replaced since their content is specific. Annexes are confirmed or excluded; **Specific** Annexes start from F (since E is the last technical Annex of part-1). Editorial informative Annex Y shows a full contents list with the above references indicated by bold initials **C, E, A, R** or **S**, respectively for **Confirmation, Exclusion, Addition, Replacement** or **Specific**.

Items like definitions, figures and tables are always specific, with normal numbering and no special indication; in case of need for reference to those of part-1, such part is specified in the reference with item number.

Common requirements for tooling are given in EN 847-1:2005+A1:2007.

Woodworking machines — Safety —

Part 2:

Horizontal beam panel circular sawing machines

1 Scope

This international standard deals with all significant hazards, hazardous situations and events as listed in [Clause 4](#) which are relevant to horizontal beam panel sawing machines with the saw carriage of the front cutting line mounted below the workpiece support, which are manually or mechanically loaded and/or unloaded, hereinafter referred to as “machines”, when they are operated, adjusted and maintained as intended and under the conditions foreseen by the manufacturer including reasonably foreseeable misuse. Also transport, assembly, dismantling, disabling and scrapping phases have been taken into account.

The machines may also be fitted with one or more of the following devices/facilities:

- a side pressure device;
- the facility for scoring;
- the facility for post-formed / soft-formed edge pre-cutting;
- a panel turning device;
- a pushing out device;
- pneumatic clamping of the saw blade;
- a powered panel loading device;
- a grooving device;
- additional cutting line(s) inside the machine for longitudinal and/or head cut (before transversal cutting line);
- workpiece vacuum clamping as part of a panel turning device or of a panel loading device.

The machines are designed for cutting panels consisting of:

- a) solid wood;
- b) material with similar physical characteristics to wood;
- c) non-ferrous metals, e.g. light alloy;
- d) gypsum boards, gypsum bounded fibreboards;
- e) composite boards made from the materials listed above;
- f) composite materials with core consisting of polyurethane or mineral material laminated with light alloy.

This document is not applicable to machines intended for use in potentially explosive atmosphere.

This document does not deal with specific hazards related to:

- 1) specific features which differ from the dashed list above;

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- 2) the machining of panels with grooving tools;
- 3) mechanical unloading of panels;
- 4) the combination of a single machine being used with any other machine (as part of a line).

This international standard applies to machines that are manufactured after the date of issue of this International Standard.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 19085-1, *Woodworking machines – Safety – Part-1: common requirements*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13849-1:2006, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13849-2:2003, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation*

ISO 13850:2006, *Safety of machinery — Emergency stop — Principles for design*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 7960:1995, *Airborne noise emitted by machine tools — Operating conditions for woodworking machines*

EN 614-1:2006+A1:2009, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 847-1:2005+A1:2007, *Tools for woodworking — Safety requirements — Part 1: Milling tools, circular saw blades*

ISO 14118:2000, *Safety of machinery — Prevention of unexpected start-up*

ISO 14119:1998+A1:2007, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

ISO 13856-3:2004+A1:2009, *Safety of machinery — Pressure sensitive protective devices — Part 3: General principles for the design and testing of pressure sensitive bumpers, plates, wires and similar devices*

EN 50178:1997, *Electronic equipment for use in power installations*

EN 50370-1:2005, *Electromagnetic compatibility (EMC) — Product family standard for machine-tools — Part 1: Emission*

EN 50370-2:2003, *Electromagnetic compatibility (EMC) — Product family standard for machine-tools — Part 2: Immunity*

IEC 60204-1:2005, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60439-1:1999, *Low-voltage switchgear and controlgear assemblies — Part 1: Type-tested and partially type-tested assemblies*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60825-1:2007, *Safety of laser products — Part 1: Equipment classification and requirements*

IEC 61310-1:2007, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals*

IEC 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests*

IEC 61496-2:2006, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs)*

IEC 61800-5-2:2007, *Adjustable speed electrical power drive systems — Part 5-2: Safety requirements — Functional*

ISO 3746:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane*

ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

ISO 9614-1:1993, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points*

ISO 11202:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections*

ISO 11204:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections*

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100:2010, in ISO 19085-1 and the following apply.

3.1

horizontal beam panel sawing machines

machine, designed for cutting panels, fitted with one travelling saw carriage per cutting line incorporating one or more circular saw blades

Note 1 to entry: The workpiece is supported in the horizontal plane and mechanically positioned by a panel pusher for the cuts and held during cutting in position by a pressure beam. The cutting stroke is power driven. Before the cutting stroke commences, the saw blade is automatically raised/lowered and is retracted or out of operation for the return stroke. The cut takes place only in a single straight line (examples, see [Figures 1](#) a), b) and c)). The workpiece is loaded manually and / or by means of a powered panel loading device and manually or mechanically unloaded. The machine may have any of the following devices/facilities:

- a) a side pressure device;
- b) the facility for scoring;
- c) the facility for cutting post-formed / soft-formed edge pre-cutting (see [Figure 3](#));
- d) a panel turning device;
- e) a pushing out device;
- f) pneumatic clamping of the saw blade;
- g) a powered panel loading device;
- h) additional cutting line(s) (before front cutting line) located inside the machine e.g. for longitudinal and/or head cut (see [Figure 2](#) and 3.2.13 and 3.2.14);

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i) workpiece vacuum clamping as part of a panel turning device or a panel loading device.

3.2

manual loading

where the operator puts the workpiece on the workpiece support from the front side of the machine i.e. there is no intermediate loading device to transfer the workpiece from the operator within 1500 mm to the machine front cutting line

3.3

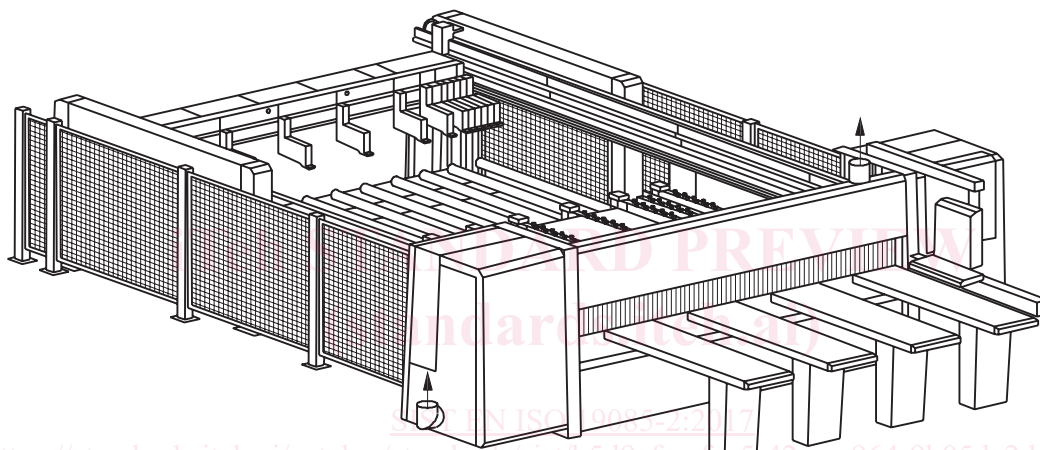
manual unloading

where the operator removes the workpiece from the workpiece support i.e. there is no intermediate unloading device to transfer the workpiece from the cutting position to the operator within 1 500 mm

3.4

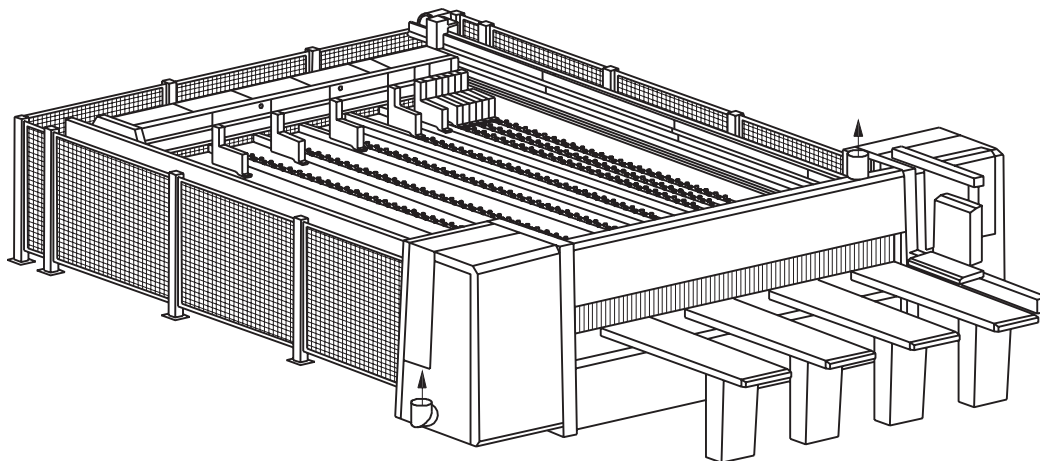
powered loading

where the workpiece(s) is / are put on the workpiece support by e.g. a lifting unit or a loading device, normally a lifting platform

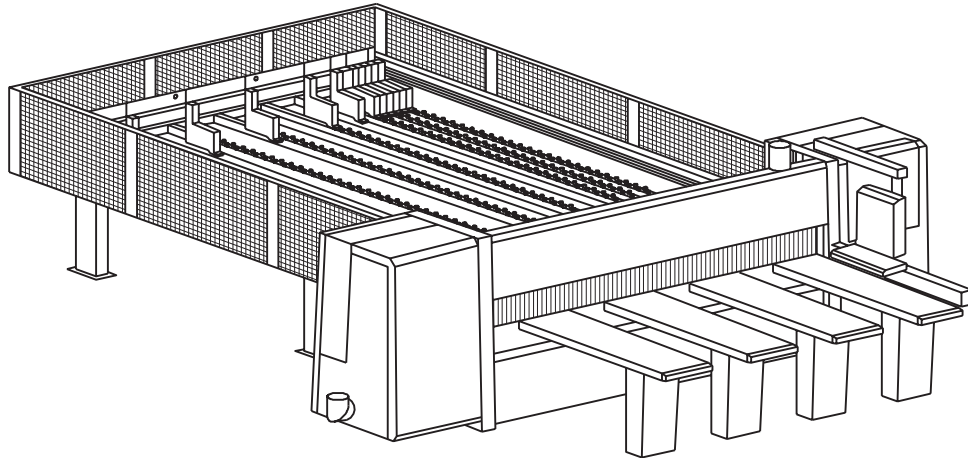


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a) Example of a horizontal beam panel saw with panel loading from the rear side by a powered loading device and with perimeter fence and light barrier



b) Example of a horizontal beam panel saw with panel loading from the front side and perimeter fence



c) Example of a horizontal beam panel saw with panel loading from the front and with distance guards mounted on the machine frame

Figure 1 — Examples of horizontal beam panel saws

3.5

saw carriage

supporting unit of the saw blade(s), which performs the cutting stroke

3.6

main saw blade

circular saw blade which is used for separating the workpiece

3.7

saw carriage rest position

position in either the left or the right side of the machine body and outside of the cutting area to which the saw carriage returns at the end of each cutting cycle

3.8

saw blade rest position

position of the saw blade below the machine table

3.9

pressure beam rest position

position to which the pressure beam returns after the saw blade(s) has/have reached its/their rest position

3.10

cutting cycle

movements of the saw carriage incorporating the saw blade to perform a single cut operation

3.11

front cutting line

cutting line closest to the operator's position (see [Figure 2](#))

3.12

longitudinal cutting line

additional cutting line(s) inside the machine (see [Figure 2](#))

3.13

head cutting line

first cutting line to divide a panel before further cuts (see [Figure 2](#)), where the saw carriage can be mounted below or above the workpiece support